

Animal Diversity Review Sheet

AP Biology

I am presenting the data differently than your book does. I am including salient characteristics of the vertebrate phyla (like their circulatory systems, osmoregulation, homeothermy, *etc.*) with the phyla—your book discusses them in future chapters along with their mammalian counterparts.

This guide is to give you an idea of what to focus on when you prepare for the exam.

You must be able to construct the currently accepted evolutionary tree and know the name, description, and representative organisms for the following animal phyla:

- Porifera
- Cnidaria (nematocysts, two-way digestion in gastrovascular cavity, diploblastic)
- Platyhelminthes (flame cells in protonephridia, two-way digestion in gastrovascular cavity)
- Nematoda (one-way digestive system)
- Mollusca (segmentation)
 - Class cephalopoda
- Arthropoda (exoskeleton, open circulatory system)
 - Class insecta (spiracle/trachea; Malpighian tubules)
 - Class crustacea (book gills)
 - Class arachnida
- Annelida (metanephridia, hermaphroditic, heavy segmentation)
- Echinodermata (water vascular system, deuterostome, adults have radial symmetry, but juveniles are bilateral)
- Chordata
 - Superclass agnatha
 - Skeleton, no jaws, no limbs
 - Class chondrichthyes
 - Tetrapodal (4 limbs in two pairs)
 - Osmoregulation
 - Gills (counter-current flow)
 - Superclass osteichthyes (now classes actinopterygii, actinistia, dipriori)
 - Skeleton
 - Gills (counter-current flow)
 - Osmoregulation (freshwater vs. saltwater)
 - Circulation (two-chambered heart)

- Class amphibia
 - Limbs
 - Respiration (skin and nascent, poor lungs)
 - Water dependency (skin, reproduction, juvenile form)
 - Circulation (three-chambered heart)
 - Ectothermic
 - Reproduction requires water, external fertilization, eggs not waterproof
- Class reptilia
 - Lungs
 - Keratinized skin
 - Internal fertilization/amniotic egg
 - Circulation (three-chambered heart with partial septum)
 - Ectothermic
- Class aves (your book just considers them an order of the reptiles—a little extreme for me)
 - Feathers
 - Hard-shelled egg
 - Skeletal modifications
 - Positive pressure breathing
 - Four-chambered heart
 - Endothermic
- Class mammalia
 - Know the requirements to be a mammal
 - Vivipary
 - Negative pressure breathing
 - Four-chambered heart
 - Endothermic

You must be able to describe the importance of the major phyletic break points: tissues (parazoan vs. eumetazoan), symmetry (radiata vs. bilateria), coeloms (acoelomates vs. pseudocoelomates vs. coelomates), and embryology (protostomes vs. deuterostomes)